

18. The aircraft of claim 2 wherein
the engine assembly of the primary lifting
mechanism comprises a single engine and the
engine assembly of the secondary lifting
5 mechanism comprises a single engine.
19. The aircraft of claim 2 wherein
the engine assembly of the primary lifting
mechanism comprises a plurality of engines
and the engine assembly of the secondary lifting
10 mechanism comprises a single engine.
20. The aircraft of claim 2 wherein
the engine assembly of the primary lifting
mechanism comprises a single engine and the
engine assembly of the secondary lifting
15 mechanism comprises a plurality of engines.
21. The aircraft of claim 2 wherein
the engine assembly of the primary lifting
mechanism comprises a plurality of engines and the
engine assembly of the secondary lifting
20 mechanism comprises a plurality of engines.
22. The aircraft of claim 4 wherein
the engine assembly of the primary lifting
mechanism comprises a single engine.

23. The aircraft of claim 4 wherein
the engine assembly of the primary lifting
mechanism comprises a plurality of engines.

24. The aircraft of claim 7 wherein
5 the engine assembly of the primary lifting
mechanism comprises a single engine.

25. The aircraft of claim 7 wherein
the engine assembly of the primary lifting
mechanism comprises a plurality of engines.

10 26. The aircraft of claim 16 wherein
the engine assembly of the primary lifting
mechanism comprises a single engine.

27. The aircraft of claim 16 wherein
the engine assembly of the primary lifting
15 mechanism comprises a plurality of engines.

28. The aircraft of claim 17 wherein
the engine assembly of the secondary lifting
mechanism comprises a single engine.

29. The aircraft of claim 17 wherein
20 the engine assembly of the secondary lifting
mechanism comprises a plurality of engines.

30. The aircraft of any one of claims 1 to 29 wherein
the primary lifting mechanism is connected to the main body
by the primary tilt enabling joint such that the primary
lifting mechanism can be positioned above the main body of
the aircraft by means of the primary tilt enabling joint
during flight of the aircraft.

31. The aircraft of any one of claims 1 to 29 wherein
the primary lifting mechanism is connected to the main body
by the primary tilt enabling joint such that the primary
lifting mechanism can be positioned in front of the main
body of the aircraft by means of the primary tilt enabling
joint during flight of the aircraft.

32. The aircraft of any one of claims 1 to 29 wherein
the secondary lifting mechanism is connected to
the main body by the secondary tilt enabling joint such that
a part the secondary lifting mechanism can be positioned
behind the main body of the aircraft by means of the secondary
tilt enabling joint during flight of the aircraft.

33. The aircraft of any one of claims 1 to 29 wherein
the secondary lifting mechanism is connected to the main
body by the secondary tilt enabling joint such that the
secondary lifting mechanism can be positioned behind the
main body of the aircraft by means of the secondary tilt
enabling joint during flight of the aircraft.

34. The aircraft of claim 30 wherein the secondary
lifting mechanism is connected to the main body by the
secondary tilt enabling joint such that the secondary lifting
mechanism can be positioned behind the main body of the aircraft
5 by means of the secondary tilt enabling joint during flight of
the aircraft.

35. The aircraft of claim 31 wherein the secondary
lifting mechanism is connected to the main body by
the secondary tilt enabling joint such that the
10 secondary lifting mechanism can be positioned behind
the main body of the aircraft by means of the secondary
tilt enabling joint during flight of the aircraft.

36. The aircraft of claim 30 wherein the secondary
lifting mechanism is connected to the main body by
the secondary tilt enabling joint such that part of the
15 secondary lifting mechanism can be positioned behind the
main body of the aircraft by means of the secondary
tilt enabling joint during flight of the aircraft.

37. The aircraft of claim 31 wherein
20 the secondary lifting mechanism is connected to the
main body by the secondary tilt enabling joint such
that part of the secondary lifting mechanism can be positioned
behind the main body of the aircraft by means of the secondary
tilt enabling joint during flight of the aircraft.

38. The aircraft of any one of claims 1 to 29 wherein
the secondary lifting mechanism is connected to the
main body by the secondary tilt enabling joint such
that part of the secondary lifting mechanism can
5 be positioned above the main body of the aircraft by means of
the secondary tilt enabling joint during flight of the aircraft.

39. The aircraft of claim 30 wherein the secondary
lifting mechanism is connected to the main body by
the secondary tilt enabling joint such that the
10 secondary lifting mechanism can be positioned above the aft
end of the main body of the aircraft by means of the
secondary tilt enabling joint during flight of the aircraft.

40. The aircraft of claim 31 wherein the secondary
lifting mechanism is connected to the main body by
the secondary tilt enabling joint such that the
15 secondary lifting mechanism can be positioned above
the aft end of the main body of the aircraft by means of the
secondary tilt enabling joint during flight of the aircraft.

41. The aircraft of any one of claims 1 to 29
20 wherein the primary tilt enabling joint is
connected to the main body by a tilt enabling
joint, which said tilt enabling joint that
connects the primary tilt enabling joint to
the main body is a third tilt enabling joint,

and which said third tilt enabling joint is such that the primary tilt enabling joint can be tilted in a plurality of directions and angles relative to the main body of the aircraft, in a controlled manner, by means of the third
5 tilt enabling joint without components of the primary tilt enabling joint having to move with respect to one another.

42. The aircraft of any one of claims 1 to 29
wherein the primary tilt enabling joint has a
movement enabling assembly that enables the primary
10 tilt enabling joint to move and a tilt activating
mechanism that can cause and control the movement
of the primary tilt enabling joint, and the secondary
tilt enabling joint has a movement enabling assembly
that allows the secondary tilt enabling joint to
15 move and a tilt activating mechanism that causes and
controls the movement of the secondary tilt enabling
joint to occur, which movement enabling assembly of
the secondary tilt enabling joint is a secondary
movement enabling assembly, and which said tilt
20 activating mechanism of the secondary tilt enabling
joint is a secondary tilt activating mechanism.

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43. The aircraft of claim 42 wherein the primary
tilt enabling joint is connected to the main
body by a tilt enabling joint, which said tilt
enabling joint that connects the primary tilt
5 enabling joint to the main body is a third tilt
enabling joint, and which said third tilt
enabling joint is such that the primary tilt
enabling joint can be tilted in a plurality of
directions and angles relative to the main body
10 of the aircraft, in a controlled manner, without
components of the primary tilt enabling joint
having to move with respect to one another,
and which third tilt enabling joint has a
movement enabling assembly that enables the
15 third tilt enabling joint to move and a tilt
activating mechanism that can cause and control
the movement of the third tilt enabling joint.

44. The aircraft of claim of 42 wherein the
movement enabling assembly of the primary tilt
20 enabling joint is a universal joint and the
tilt activating mechanism of the primary tilt
enabling joint comprises as plurality of
hydraulic actuators connected to the universal
joint of the primary tilt enabling joint and the
25 movement enabling assembly of the secondary tilt

enabling joint is a universal joint, with the tilt activating mechanism of the secondary tilt enabling joint comprising a plurality of hydraulic actuators connected to the universal joint of the secondary
5 tilt enabling joint.

45. The aircraft of any one of claims 1 to 29 wherein
the secondary lifting mechanism is connected to the
the secondary tilt enabling joint by a rotating mechanism
such that during flight of the aircraft the secondary lifting
10 mechanism can be rotated in a controlled manner relative to
the secondary tilt enabling joint by means of the rotating
mechanism.

46. The aircraft of any one of claims 1 to 29 wherein
the secondary tilt enabling joint is connected to the
15 main body of the aircraft by a rotating mechanism such that
during flight of the aircraft the secondary tilt enabling
joint can be rotated relative to the main body of the
aircraft in a controlled manner by means of the rotating
mechanism.

47. The aircraft of claim 46

wherein the primary tilt enabling joint has a movement enabling assembly that enables the primary tilt enabling joint to move and a tilt activating mechanism that can cause and control the movement of the primary tilt enabling joint, and the secondary tilt enabling joint has a movement enabling assembly that allows the secondary tilt enabling joint to move and a tilt activating mechanism that causes and controls the movement of the secondary tilt enabling joint to occur, which movement enabling assembly of the secondary tilt enabling joint is a secondary movement enabling assembly, and which said tilt activating mechanism of the secondary tilt enabling joint is a secondary tilt activating mechanism.

48. The aircraft of claim of 47 wherein the

movement enabling assembly of the primary tilt enabling joint is a universal joint and the tilt activating mechanism of the primary tilt enabling joint comprises as plurality of hydraulic actuators connected to the universal joint of the primary tilt enabling joint, and the movement enabling assembly of the secondary tilt enabling joint is a universal joint, with the tilt activating mechanism of the secondary tilt enabling joint

comprising a plurality of hydraulic actuators connected to the universal joint of the secondary tilt enabling joint.

49. The aircraft of claim 47 wherein the primary
5 tilt enabling joint is connected to the main body by a tilt enabling joint, which said tilt enabling joint that connects the primary tilt enabling joint to the main body is a third tilt enabling joint, and which said third tilt
10 enabling joint is such that the primary tilt enabling joint can be tilted in a plurality of directions and angles relative to the main body of the aircraft, in a controlled manner, without components of the primary tilt enabling joint
15 having to move with respect to one another, and which third tilt enabling joint has a movement enabling assembly that enables the third tilt enabling joint to move and a tilt activating mechanism that can cause and control
20 the movement of the third tilt enabling joint.
50. The aircraft of claim 48 wherein a fin is connected to the secondary lifting mechanism such that the fin protrudes outward from the secondary lifting mechanism.
51. The aircraft of claim 36
wherein the primary tilt enabling joint has a movement enabling assembly that enables the primary

tilt enabling joint to move and a tilt activating mechanism that can cause and control the movement of the primary tilt enabling joint, and the secondary tilt enabling joint has a movement

5 enabling assembly that allows the secondary tilt enabling joint to move and a tilt activating mechanism that causes and controls the movement of the secondary tilt enabling joint to occur, which movement enabling assembly of the secondary tilt

10 enabling joint is a secondary movement enabling assembly, and which said tilt activating mechanism of the secondary tilt enabling joint is a secondary tilt activating mechanism, and which primary tilt enabling joint is connected to the main

15 body by a tilt enabling joint, which said tilt enabling joint that connects the primary tilt enabling joint to the main body is a third tilt enabling joint, and which said third tilt enabling joint is such that the primary tilt

20 enabling joint can be tilted in a plurality of directions and angles, in a controlled manner, and wherein the third tilt enabling joint has a movement enabling assembly that enables the third tilt enabling joint to move and a tilt activating mechanism that can cause and control the movement of the third tilt enabling joint.

52. The aircraft of claim 51 wherein the secondary
tilt enabling joint is connected to the main body
of the aircraft by a rotating mechanism such that
during flight of the aircraft the secondary tilt
enabling joint can be rotated relative to the main
body of the aircraft in a controlled manner by means
of the rotating mechanism.
53. The aircraft of claim of 42 wherein the
movement enabling assembly of the primary tilt
enabling joint is a plurality of hinges
transversely connected to one another and the tilt
activating mechanism of the primary tilt enabling
joint comprises as plurality of hydraulic actuators
10 connected to the movement enabling assembly of
the primary tilt enabling joint, and the
movement enabling assembly of the secondary tilt
enabling joint is a universal joint, with the tilt
activating mechanism of the secondary tilt enabling
15 joint comprising a plurality of hydraulic actuators
connected to the universal joint of the secondary
tilt enabling joint.
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54. The aircraft of claim of 42 wherein the
movement enabling assembly of the primary tilt
enabling joint is a plurality of hinges
transversely connected to one another and the tilt
5 activating mechanism of the primary tilt enabling
joint comprises as plurality of hydraulic actuators
connected to the movement enabling assembly of
the primary tilt enabling joint, and the
movement enabling assembly of the secondary tilt
10 enabling joint is a plurality of hinges
transversely connected to one another with the tilt
activating mechanism of the secondary tilt enabling
joint comprising a plurality of hydraulic actuators
connected to the movement enabling assembly of
the secondary tilt enabling joint.

55. The aircraft of claim of 42 wherein the
movement enabling assembly of the primary tilt
enabling joint is a universal joint and the tilt
activating mechanism of the primary tilt enabling
20 joint comprises as plurality of hydraulic actuators
connected to the universal joint of the primary
tilt enabling joint and the movement enabling
assembly of the secondary tilt enabling joint is a
plurality of hinges transversely connected to one
25 another with the tilt activating mechanism of the

secondary tilt enabling joint comprising a plurality of hydraulic actuators connected to the movement enabling assembly of the secondary tilt enabling joint.

56. The aircraft of any one of claims 1 to 29 wherein the primary lifting mechanism is connected to the main body of the aircraft by means of the primary tilt enabling joint such that the primary lifting mechanism can be tilted in a forward direction and a rearward direction relative to the main body of the aircraft, in a controlled manner, by means of the primary tilt enabling joint and the secondary lifting mechanism is connected to the main body of the aircraft by means of the secondary tilt enabling joint such that the secondary lifting mechanism can be tilted in a forward and rearward direction relative to the main body of the aircraft, in a controlled manner, by means of the secondary tilt enabling joint.
57. The aircraft of claim 36 wherein the primary lifting mechanism is connected to the main body of the aircraft by means of the primary tilt enabling joint such that the primary lifting mechanism can be tilted in a forward direction and a rearward direction relative

to the main body of the aircraft, in a controlled manner, by means of the primary tilt enabling joint, and the secondary lifting mechanism is connected to the main body of the aircraft by means of the secondary tilt enabling joint such that the secondary lifting mechanism can be tilted in a forward and rearward direction relative to the main body of the aircraft, in a controlled manner, by means of the secondary tilt enabling joint.

10 58. The aircraft of claim 57 wherein the primary tilt enabling joint comprises a plurality of movement enabling assemblies that enable the primary tilt enabling joint to have a tilt motion and a plurality of tilt activating mechanisms that can cause and control the movement of the primary tilt enabling joint, and the secondary tilt enabling joint comprises a plurality of movement enabling assemblies that allow the secondary tilt enabling joint to move and a plurality of tilt activating mechanism that can cause and control the movement of the secondary tilt enabling joint.

20 59. The aircraft of any one of claims 1 to 29 wherein the primary lifting mechanism is connected to

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- the main body by the primary tilt enabling joint such that the whole of the primary lifting mechanism can be placed in position that is in front of and above the main body of the aircraft by means of the
- 5 primary tilt enabling joint during flight of the aircraft.
60. The aircraft of any one of claims 1 to 29 wherein the secondary lifting mechanism is connected to the main body by the secondary tilt enabling joint such that the whole of the secondary lifting mechanism can be placed in a position that is
- 10 above and behind the main body of the aircraft by means of the secondary tilt enabling joint during flight of the aircraft.
61. The aircraft of claim 59 wherein the secondary lifting mechanism is connected to the main body by the secondary tilt enabling joint such that the whole of the secondary lifting mechanism can be placed in a position that is above and
- 15 behind the main body of the aircraft by means of the secondary tilt enabling joint during flight of the aircraft.
62. The aircraft of any one of claims 1 to 29 wherein the primary lifting mechanism is connected to
- 20 the main body by the primary tilt enabling joint such that a part of the primary lifting mechanism can be positioned in front of the main body of the aircraft by means of the primary tilt enabling joint during flight of the aircraft.

63. The aircraft of claim 62 wherein the secondary lifting mechanism is connected to the main body by the secondary tilt enabling joint such that the secondary lifting mechanism can be positioned behind the main body of the aircraft by means of
5 the secondary tilt enabling joint during flight of the aircraft.
64. The aircraft of claim 62 wherein the secondary lifting mechanism is connected to the main body by the secondary tilt enabling joint such that part of the secondary lifting mechanism can be positioned behind the main body of the
10 aircraft by means of the secondary tilt enabling joint during flight of the aircraft.
65. The aircraft of claim 62 wherein the secondary lifting mechanism is connected to the main body by the secondary tilt enabling joint such that the secondary lifting mechanism can be positioned above the aft end of the main body of the
15 aircraft by means of the secondary tilt enabling joint during flight of the aircraft.
66. The aircraft of claim 59 wherein by means of the primary tilt enabling joint the primary lifting mechanism can be placed in a position such that only a part of the primary lifting mechanism is in front of the main body of the aircraft by means of the primary tilt enabling joint during flight of
20 the aircraft.

67. The aircraft of claim 60 wherein by means of the secondary
tilt enabling joint the secondary lifting mechanism can be
placed in a position such that only a part of the secondary
lifting mechanism is in behind of the main body of the aircraft
5 by means of the secondary tilt enabling joint during flight of
the aircraft.

68. The aircraft of claim 46 wherein the secondary
lifting mechanism is connected to the main body by the secondary
tilt enabling joint such that the whole of the secondary
10 lifting mechanism can be placed in a position that is
above and behind the main body of the aircraft by means of
the secondary tilt enabling joint during flight of the aircraft.

69. The aircraft of claim 68 wherein by means of the secondary
tilt enabling joint the secondary lifting mechanism can be
15 placed in a position such that no part of the secondary
lifting mechanism is in behind of the main body of the aircraft.

70. The aircraft of claim 69 wherein
the primary lifting mechanism is connected to
the main body by the primary tilt enabling joint
20 such that by means of the primary tilt enabling joint
the whole of the primary lifting mechanism can be placed in
position that is in front of and above the main body of the
aircraft during flight of the aircraft.

71. The aircraft of claim 70 wherein by means of the primary tilt enabling joint the primary lifting mechanism can be placed in a position such that only a part of the primary lifting mechanism is in front of the main body of the aircraft.

5 72. The aircraft of claim 71 wherein the primary lifting mechanism is connected to the main body of the aircraft by means of the primary tilt enabling joint such that the primary lifting mechanism can be tilted in a forward direction and a rearward direction relative to the
10 main body of the aircraft, in a controlled manner, by means of the primary tilt enabling joint and the secondary lifting mechanism is connected to the main body of the aircraft by means of the secondary tilt enabling joint such that the secondary lifting
15 mechanism can be tilted in a forward and rearward direction relative to the main body of the aircraft, in a controlled manner, by means of the secondary tilt enabling joint.

73. The aircraft of claim 72 wherein a fin is connected
20 to the secondary lifting mechanism such that the fin protrudes outward from the secondary lifting mechanism.

73. The aircraft of claim 45 wherein
the secondary tilt enabling joint is such that
the secondary lifting mechanism is able to be tilted
in a forward direction, a rearward direction, and in
5 lateral directions with respect to the main body of the
aircraft by means of the secondary tilt enabling joint.

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73. The aircraft of claim 46 wherein
the secondary tilt enabling joint is such that
the secondary lifting mechanism is able to be tilted
10 in a forward direction, a rearward direction, and in
lateral directions with respect to the main body of the
aircraft by means of the secondary tilt enabling joint.

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73. The aircraft of claim 52 wherein
the secondary tilt enabling joint is such that
15 the secondary lifting mechanism is able to be tilted
in a forward direction, a rearward direction, and in
lateral directions with respect to the main body of the
aircraft by means of the secondary tilt enabling joint.

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74. ~~The aircraft of any one of claims 1 to 29 wherein~~
20 the secondary lifting mechanism is connected to the
secondary tilt enabling joint by a rotating mechanism such
that during flight of the aircraft the secondary lifting
mechanism can be rotated in a controlled manner relative to
~~the secondary tilt enabling joint by means of the rotating~~

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mechanism,

and the primary lifting mechanism and the secondary lifting mechanism are connected to the main body of the aircraft such that the primary lifting mechanism is further forward with respect to the main body of the aircraft than is the position of the secondary lifting mechanism with respect to the main body of the aircraft.

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5 75. The aircraft of claim 74 wherein
the secondary tilt enabling joint is such that the secondary
10 lifting mechanism is able to be tilted in a forward direction,
a rearward direction, and in lateral directions with respect
to the main body of the aircraft by means of the secondary
tilt enabling joint.

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10 76. The aircraft of claim 41 wherein
the primary tilt enabling joint is such that the primary
15 lifting mechanism is able to be tilted in a forward direction,
a rearward direction, and in lateral directions with respect
to the main body of the aircraft by means of the primary tilt
enabling joint.

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20 77. The aircraft of claim 43 wherein
the primary tilt enabling joint is such that the primary
lifting mechanism is able to be tilted in a forward direction,
a rearward direction, and in lateral directions with respect
to the main body of the aircraft by means of the primary tilt

enabling joint,

and the primary tilt enabling joint is connected to the main body by an additional tilt enabling joint, which said additional tilt enabling joint that connects the primary tilt enabling joint to the main body is a third tilt enabling joint, and which said third tilt enabling joint is such that the primary tilt enabling joint can be tilted in a plurality of directions and angles relative to the main body of the aircraft, in a controlled manner, and which third tilt enabling joint has a movement enabling assembly that enables the third tilt enabling joint to move and a tilt activating mechanism that can cause and control the movement of the third tilt enabling joint.

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78. The aircraft of claim 45 wherein
the primary tilt enabling joint is such that the primary lifting mechanism is able to be tilted in a forward direction, a rearward direction, and in lateral directions with respect to the main body of the aircraft by means of the primary tilt enabling joint,
and the primary tilt enabling joint is connected to the main body by a tilt enabling joint, which said tilt enabling joint that connects the primary tilt enabling joint to the main body is a third tilt enabling joint, and which said third tilt enabling joint

is such that the primary tilt enabling joint can be tilted in
a plurality of directions and angles relative to the main
body of the aircraft, in a controlled manner, and which third
tilt enabling joint has a movement enabling assembly that
enables the third tilt enabling joint to move and a tilt
activating mechanism that can cause and control
the movement of the third tilt enabling joint,

and the secondary tilt enabling joint is such that
the secondary lifting mechanism is able to be tilted

in a forward direction, a rearward direction, and in
lateral directions with respect to the main body of the
aircraft by means of the secondary tilt enabling joint.

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79. The aircraft of claim 46 wherein

the primary tilt enabling joint is such that the primary
lifting mechanism is able to be tilted in a forward direction,
a rearward direction, and in lateral directions with respect
to the main body of the aircraft by means of the primary tilt
enabling joint,

and the primary

tilt enabling joint is connected to the main body by an
tilt enabling joint, which said tilt enabling joint that
connects the primary tilt enabling joint
to the main body is a third tilt enabling joint, and which
said third tilt enabling joint is such that the primary tilt

enabling joint can be tilted in a plurality of directions and angles relative to the main body of the aircraft, in a controlled manner, and which third tilt enabling joint has a movement enabling assembly that enables the third tilt

5 enabling joint to move and a tilt activating mechanism that can cause and control the movement of the third tilt enabling joint,

and the secondary tilt enabling joint is such that the secondary lifting mechanism is able to be tilted
10 in a forward direction, a rearward direction, and in lateral directions with respect to the main body of the aircraft by means of the secondary tilt enabling joint.

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80. The aircraft of claim 76 wherein

the primary lifting mechanism and the secondary lifting
15 mechanism are connected to the main body of the aircraft such that the primary lifting mechanism is further forward with respect to the main body of the aircraft than is the position of the secondary lifting mechanism with respect to the main body of the aircraft.

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20 81. The aircraft of claim 77 wherein

the primary lifting mechanism and the secondary lifting mechanism are connected to the main body of the aircraft such that the primary lifting mechanism is further forward with respect to the main body of the aircraft than is the

position of the secondary lifting mechanism with respect to
the main body of the aircraft.

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82. The aircraft of claim 78 wherein
the primary lifting mechanism and the secondary lifting
5 mechanism are connected to the main body of the aircraft
such that the primary lifting mechanism is further forward
with respect to the main body of the aircraft than is the
position of the secondary lifting mechanism with respect to
the main body of the aircraft.

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10 83. The aircraft of claim 79 wherein
the primary lifting mechanism and the secondary lifting
mechanism are connected to the main body of the aircraft
such that the primary lifting mechanism is further forward
with respect to the main body of the aircraft than is the
15 position of the secondary lifting mechanism with respect to
the main body of the aircraft.

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84. The aircraft of claim 41 wherein
the primary lifting mechanism and the secondary lifting
mechanism are connected to the main body of the aircraft
20 such that the primary lifting mechanism is further forward
with respect to the main body of the aircraft than is the
position of the secondary lifting mechanism with respect
to the main body of the aircraft.

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85. The aircraft of claim 45 wherein

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the primary lifting mechanism and the secondary lifting mechanism are connected to the main body of the aircraft such that the primary lifting mechanism is further forward with respect to the main body of the aircraft than is the position of the secondary lifting mechanism with respect to the main body of the aircraft.

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85. The aircraft of any one of claims 1 to 29 wherein the primary lifting mechanism and the secondary lifting mechanism are connected to the main body of the aircraft such that the primary lifting mechanism is further forward with respect to the main body of the aircraft than is the position of the secondary lifting mechanism with respect to the main body of the aircraft.